Original Article

Inhibitory Effect of Myricetin on Melanoma Cells (A375)

Fereshte Abdolmaleki[1], Nematollah Gheibi[2], Hossein Ahmadpour Yazdi[3*]

[1] Department of Medical Biotechnology. School of Paramedical Sciences, Qazvin University of Medical Sciences, Qazvin, Iran
[2] Department of Biophysics, Cellular and Molecular Research Center, Qazvin University of Medical Sciences, School of Medicine, Qazvin, Iran
[3]Department of Nanomedicine, Cellular and Molecular Research Center, Qazvin University of Medical Sciences, School of Medicine, Qazvin, Iran

Received: 20 August, 2016; Accepted: 03 January, 2017

Abstract

Background: Cancer, a major cause of mortality worldwide, is a group of diseases distinguished by uncontrolled growth and expansion of abnormal cells. According to American Cancer Society, melanoma, a kind of skin cancer, is one of the most prevalent cancers. The side effects of chemical treatment developed more demands on natural products. Flavonoids, polyphenol compounds, with anticancer and antioxidant activity attracted more attention to themselves.

Materials and Methods: Through this investigation the effect of myricetin on cell proliferation was determined by MTT (Methylthiazolyl diphenyl-tetrazolium bromide) assay. A375 cell lines were seeded in a 96 wells plate and were exposed to different concentrations of myricetin (10, 15, 20, 40, 60, 80, and 100µM). After considered times, the MTT solution was added, then the viability of cells was detected by measuring the absorbance on 570 and 630 nm.

Results: Our finding showed that low concentration of myricetin (up to 25µM) has no toxicity effect. Also the result confirmed the IC_{50} of myricetin on melanoma cells for three ordered period (24, 48, 72 hours) as following: 50, 40, 35µM, respectively.

Conclusion: According to this research, myricetin has anti-proliferative effect on melanoma cells, which can be used as a therapeutic agent. We hope that this study could be used as a mile stone in future researches to acquire confirmative results.

Keywords: Melanoma, Flavonoids, Polyphenol, A375 cell line, Myricetin, Anti-proliferative

***Corresponding Author:** Hossein Ahmadpour Yazdi, Assistant Professor in Nanomedicine, Cellular and Molecular Research Center, Qazvin University of Medical Sciences, School of Medicine, Qazvin, Iran. Tel: (+98) 28 33369581 (unit 3944); Email: hahmadpour@qums.ac.ir

Please cite this article as: Abdolmaleki F, Gheibi N, Ahmadpour Yazdi H. Inhibitory Effect of Myricetin on Melanoma Cells (A375). Novel Biomed. 2017;5(3):104-8.

Introduction

Cancer as a leading cause of death in most countries, especially in less developed countries is growing worldwide. The approval of mechanical lifestyle, poor diet, less activity, smoking and reproductive changes have increased the cancer burden globally[1]. Among the list of common cancers reported by the American Cancer Society, melanoma, a kind of skin cancer, due to new lifestyles allocated high rate of mortality to itself[2].

The toxicity of current chemotherapeutics put all of efforts toward new anticancer drugs with greater efficacy and fewer side effects. Among natural compounds, low molecular weight product, flavonoids, rich in seeds, vegetables, and citrus fruits, attracted more attention according to their impressive pharmacological properties including antibacterial, antioxidant, antiangiogenic, anticancer and antiallergic activities[3].

Chemically they are polyphenol with a phenyl benzopyrone structure (C_6- C_3-C_6), on the basis of